**Preparation method**

**Steel and welded steel (macro)**

### Recommended machines and additional consumables (not included)

<table>
<thead>
<tr>
<th>Cutting Equipment</th>
<th>ATM Brillant</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grinding Equipment</td>
<td>ATM Opal</td>
</tr>
</tbody>
</table>

### Pressure parameters and specimen size

<table>
<thead>
<tr>
<th>Specimen diameter [mm]</th>
<th>25</th>
<th>30</th>
<th>40</th>
<th>50</th>
<th>60</th>
</tr>
</thead>
<tbody>
<tr>
<td>Divergence in pressure used in the preparation methods</td>
<td>(-5 N … 10 N)</td>
<td>-5 N</td>
<td>0</td>
<td>+5 N</td>
<td>(+5 N … 10 N)</td>
</tr>
</tbody>
</table>

### Notes:

**Planar grinding SiC-paper/foil P180 (180) H2O 250-300 ►► Synchronous Rotation 30**

- Until plane (slightly before point of interest)

**Grinding SiC-paper/foil P320 (280) H2O 250-300 ▬► Counter Rotation 25**

- 1:00 (until point of interest)

**Grinding SiC-paper/foil P600 (400) H2O 250-300 ▬► Counter Rotation 25**

- 1:00 (until point of interest)

**Optional: Etching (chem.) Adler’s reagent (macro) Approx. 0.03-0.20**

Notes:

### BEGINNERS GUIDE

**CUTTING**

- Use suitable cut-off wheels for ferrous material (e.g. ATM FS-B wheels)
- Cutting speed max. 0.25 mm/s

**MOUNTING**

- Mounted or unmounted
- Hot and cold mounting both possible

**GRINDING**

- Start grinding with SiC-paper/foil P180
- Continue with P320 and P600
- Thoroughly wash samples and holder under running water after each grinding step
- Use ethanol and blow dryer to avoid water stains
- Use the consumables only for steel and not for other materials

Notes:

### SAMPLE MICROGRAPHS

- welded area clearly visible
- clean homogenous surface

### Notes:

- welded area clearly visible
- clean homogenous surface

- scratches from grinding
- clean sample and sample holder
- repeat grinding steps

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